

HISTORIC AMERICAN ENGINEERING RECORD
INDEX TO PHOTOGRAPHS

HAER
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CHAMPION-INTERNATIONAL PAPER COMPANY
(Russell Paper Company)

HAER No. MA-139

West bank of the Spicket River at Canal Street
Lawrence
Essex County
Massachusetts

Martin Stupich, Photographer, February 1997, except as noted.

- MA-139-1 General view of site from head of canal, showing south (Canal Street) side of structures; view to northwest.
- MA-139-2 General view of site from south side of canal, showing south (Canal Street) side of structures; view to northeast.
- MA-139-3 General view of site from Lawrence General Hospital parking deck (former location of coating mill) showing north side of structures; view to southeast.
- MA-139-4 Long view of west half of site from Lawrence General Hospital parking deck (former location of coating mill) showing north side of rear portion of Wilder Mill and Paper Machine Building; view to southwest.
- MA-139-5 Long view of east half of site from Lawrence General Hospital parking deck (former location of coating mill) showing north side of Clay Storage Silos and northeast block of Wilder Mill; view to southwest.
- MA-139-6 General view of site from roof of neighboring building showing north side of structures; view to southeast.
- MA-139-7 General view of east facade of c.1962 addition to former coating mill on east side of Spicket River; view to southwest.
- MA-139-8 General view of north side of Spicket River Bridge (c.1857 stone arch) and penstock beyond, located just south of the river's confluence with the raceway; view to south.
- MA-139-9 Closer view of north side of Spicket River Bridge; view to south. *
- MA-139-10 General oblique view of steel pedestrian bridge spanning mouth of raceway; view to northwest.
- MA-139-11 General view of raceway from its mouth just below pedestrian bridge; view to west.

- MA-139-12 General view of raceway from pedestrian bridge, showing north wall of Wilder Mill on left and stone arch bridge carrying Spicket Street and railroad right-of-way over raceway; view to west.
- MA-139-13 General view of raceway from pedestrian bridge, showing north wall of Wilder Mill on left and stone arch bridge carrying Spicket Street and railroad right-of-way over raceway; view to west.
- MA-139-14 View of ruins at southeast corner of site between Clay Storage Silos (on left) and Wilder Mill (on right); view to southwest.
- MA-139-15 View of passage (formerly Spicket Street; later, railroad right-of-way) between Wilder Mill (on left) and Paper Machine Building (on right), showing collapsed area of stone arch bridge spanning raceway in foreground; view to south.
- MA-139-16 View of passage (formerly Spicket Street; later, railroad right-of-way) between Paper Machine Building (on left) and Wilder Mill (on right), from Canal Street; view to north.
- MA-139-17 View of passage (formerly Spicket Street; later, railroad right-of-way) between Paper Machine Building (on left) and Wilder Mill (on right), from inside security fence; view to north.
- MA-139-18 Historic view, ca. 1895; view to northeast across canal. "*Russell Paper Mills--Lawrence*," in Ralph's Scrapbook, Illustrated by His Own Camera and Collection of Photographs, and Compiled by His Father Edmund Bicknell, by Ralph Edmund Bicknell (Lawrence, Massachusetts: The Andover Press, 1905), p.84.
- MA-139-19 Historic bird's-eye view, ca. 1918; view to north. "*Plant of the Champion-International Company*," in Lawrence Yesterday and Today, by Maurice B. Dorgan. (Lawrence, Massachusetts: Press of Dick & Trumpold, 1918), p.159.

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The following historic views are from a photo essay on paper manufacturing at the Champion-International Paper Mills at Lawrence, in "Massachusetts-Beehive of Business," by William Joseph Showalter, National Geographic Magazine, vol. 37, no. 3 (March 1920).

- MA-139-20 *"Raw Material for the Geographic Magazine. The mills of the Champion International Company which make paper on which the National Geographic Magazine is printed are located in Lawrence, Mass. This picture shows great piles of pulp-wood ready for conversion into paper for The Geographic. Parts of these wood piles are more than 50 feet high. The cars shown in the picture are on a trestle 21 feet high. The Geographic magazines mailed in a single year, if laid side by side, would reach from Quito, Ecuador, across Colombia and the Caribbean, thence across the United States and Canada, through the North Pole, and across Siberia, China, and Siam to Bangkok. It takes 33,000 miles of wrappers to mail one year's edition. It would require a bookshelf more than three and a half miles long to hold all the copies of this month's issue of The Geographic." (p.235.)*
- MA-139-21 *"A corner of the Beater-Room, where the digested wood is further treated before becoming ready for conversion into paper. In this room digested spruce wood, treated with sulphur fumes, and digested poplar wood, treated with caustic soda, are mixed—the one to give strength and the other bulk to the paper, long-fibered wood making strong paper just as long-staple cotton makes strong cloth. Clay, used for filler, and other materials are then added, and the mass is thoroughly beaten and mixed and brought to a proper consistency for use in the paper-making machines." (p.236.)*
- MA-139-22 *"National Geographic Paper in the making. In this large room, some two hundred feet long, the liquid pulp shown in the previous picture is converted into uncoated paper. At the rear of each machine is a tank of the pulp. A film of this pulp flows out upon an endless belt of fine-meshed wire, which is shaken vigorously. The water drops through the wire and gradually the residue solidifies. By the time the endless belt reaches the returning point, this residue is solid enough to hold its form as paper. It is then caught up between two rolls, which squeeze out the remaining water. Thence it passes around a series of iron drums filled with live steam; these dry it. After that it passes between big calender rolls and emerges in the foreground as machine-finish paper, ready for the coating or glazing process. These machines give one an idea of the huge proportions of a modern paper plant." (p.237.)*
- MA-139-23 *"In the Coating-Room. This picture shows the rolls of paper made on the machine shown on page 237, just starting on the coating-machines. The paper passes through a bath of coating material: then through felt-covered rolls; then between vibrating brushes, which lay the coating material evenly and smoothly on the paper. It then passes out at the left into the drying-room (see following illustration)." (p.238.)*

- MA-139-24 *"The Drying-Room in the coating mill at Lawrence, Mass. After the paper has received its coating from the coating-machine shown in the previous picture, it passes in a continuous web to the drying-room. Blasts of hot air coming out of galvanized ducts beneath support it for a distance of 100 feet, until it reaches the drying-chamber in the rear of the room. Here it hangs in festoons much like those of cotton cloth shown on page 219. In the picture the paper is passing from right to left. After leaving the drying-room it is wound on rolls, as shown in the next picture." (p.238.)*
- MA-139-25 *"Paper ready for the calender presses. This picture shows the paper after it has been coated and dried, as shown on page 238, and is being rolled at the end of the coating-machine. It is now ready to be sent to the big presses which calender it (or iron it, as popular parlance would have it). The pictures on pages 238 and 239 show a continuous process over a single machine; but, on account of the length of the machine, the process is illustrated in sections." (p.239.)*
- MA-139-26 *"A battery of calender presses at work finishing magazine paper. After the coated paper has been dried and put into rolls, as shown in the preceding pictures, it is brought to the room shown here. A roll is put in the reel at the man's shoulder in the foreground and started through the machine. It passes between the two top rollers, and then in and out between the succeeding rollers, until it reaches the bottom. Many tons' pressure have ironed it before it comes out and is rolled up again. This process gives it the finish that the National Geographic must have to maintain its high standard." (p.240.)*
- MA-139-27 *"The Assorting-Room in the paper mill. After the paper has been calendered, the big rolls are put into a cutting-machine that cuts the continuous roll into sheets of the desired size. These are then examined, sheet by sheet, by the women shown in the picture. All perfect sheets are put into one pile and the imperfect ones are placed in another pile. The perfect sheets are then ready, after trimming, for the presses of the National Geographic." (p.241.)*

